Incorporating Enemy Psychological Vulnerability into US Army Heavy Division IPB Docrine

A Monograph
by

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ABSTRACT

INCORPORATING ENEMY PSYCHOLOGICAL VULNERABILITY INTO US ARMY HEAVY DIVISION IPB DOCTRINE by Lieutenant Colonel Peter J. Schifferle, USA, 69 pages

This monograph analyzes the effectiveness of US Army Intelligence Preparation of the Battlefield doctrine to identify and target enemy psychological vulnerabilities. The focus is on the heavy division. First, the monograph evaluates US Army heavy division doctrine in effect at the time of Operation Desert Storm, January 17, 1991, to February 28, 1991. Then the monograph assesses the battlefield's effect on human psychology, concentrating on combat experiences since World War I. This assessment discusses factors that contribute to unit cohesion and fighting ability, as well as forces that destroy combat effectiveness. The monograph concludes the second section by identifying specific aspects of an armed force that are targetable psychological vulnerabilities.

The monograph then investigates whether US Army heavy divisions in Operations Desert Shield and Desert Storm took full advantage of Iraqi psychological vulnerabilities. There was marked success in operational psychological warfare and deception, However, at the division level, psychological warfare and deception were hampered by several problems, including a shortage of personnel and planning staffs. The monograph also identifies several incidents during Operation Desert Storm where enemy psychological vulnerabilities were ignored at the tactical level. These incidents revealed shortcomings in identifying the psychological near-collapse of Iraqi units and an occasional failure to continue night attacks, by elements of VII Corps, when the Iraqi forces were psychologically defeated.

The monograph concludes with an analysis of doctrinal changes since Operation Desert Storm. Although a new edition of FM 100-5 was published on 14 June 1993, emphasizing the psychological aspects of warfare, US doctrine specifically for the heavy division has not yet changed to reflect this emphasis. Several changes have occurred with a new draft of the IPB manual, FM 34-130, but they are procedural and add nothing to assessing enemy psychological vulnerability. The monograph recommends the use of a vulnerabilities recognition cell to identify and target specific enemy vulnerabilities during both planning and execution. The monograph identifies the failure of most simulations to account for the human nature of the threat, limiting the utility of simulations for doctrinal development.

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INTRODUCTION

Moral force is an essential characteristic of the battlefield. Military doctrine since the days of Gustavus Adolphus has been designed to maintain friendly moral force and unit cohesion and to destroy enemy moral force and unit cohesion. American Army doctrine for heavy divisions should also strive to retain friendly moral force while attacking enemy moral force. Moral force on the modern battlefield is usually defined as the psychological component of the individual soldier, the primary group of individuals, the cohesion of larger units and the will of the commander(s). This paper analyzes the efficiency of recent and emerging American Army heavy division doctrine at identifying and targeting enemy psychological vulnerabilities on the battlefield.

Section I reviews U.S. Army heavy division doctrine at the time of Operation Desert Storm, assessing its validity for identification and targeting of enemy psychological vulnerability. Section II assesses the theoretical understanding of psychological vulnerability on the modern battlefield. Section III offers an analysis of the U.S. Army heavy division experience in Operations Desert Shield and Desert Storm for examples of effective and ineffective use of enemy psychological vulnerability. The last section assesses doctrine written since Operation Desert Storm, and provides several recommendations for future doctrine.

Doctrine in this monograph is defined as having two parts -- what doctrine is and what doctrine should do for an army.

Doctrine is defined in FM 100-5, Operations (1993), as "fundamental principles by which military forces guide their actions in support of national objectives. Doctrine is authoritative but requires judgment in application." Doctrine's capacity to function in support of an army can be analyzed by assessing the intended purpose of the doctrine and then assess the fulfillment of that purpose in active operations.[1] This monograph is concerned with both assessments of doctrine -- what it is for and how effective it is. This monograph's analytical system is to analyze what doctrine specifies for assessments of enemy psychological vulnerability and its possibilities for targeting and then assesses the quality of the application of that doctrine.

Operation Desert Storm, 17 January 1991 to 28 February 1991, resulted in a rapid victory over the Iraqi army. The lessons of this victory should both guide and caution the United States Army -- guide the Army to future victories and caution the Army to the efficient application of combat power. With force drawdowns combined with a national military strategy of winning two simultaneous regional contingencies, the United States Army can no longer afford to be profligate with its forces, either material or moral. Future conflicts will require efficient, not merely effective use of military force. Moral force is one area where further study will yield great efficiencies.[2]

Doctrine for U.S. Army Heavy Divisions Up To Operation Desert Storm

Doctrine is critical to the effective and efficient application of military force. An armed force is trained to act in accordance with doctrine, and doctrine serves as a basis for how to think about combat in the future. Units in the stress of contingency planning and in actual combat operations will act in accordance with doctrine, or as the old army adage puts it, they "will fight as they trained." U.S. Army doctrine for the heavy division, usually referred to as AirLand Battle Doctrine, was well established by the summer of 1990 when Saddam Hussein invaded Kuwait. By the spring of 1991, that doctrine was tested in the crucible of the Persian Gulf War and, by most accounts, was validated. One area remained vague and unexploited at the heavy division level -- the ability to identify and target enemy psychological vulnerabilities through efficient intelligence preparation of the battlefield.

Enemy psychological vulnerabilities are those moral forces that are weaknesses of the enemy. These moral forces are defined for this monograph as the combination of individual soldier psychological willingness and ability to fight; the cohesion of small groups, usually referred to as primary groups in the literature; the ability of large groups, or military units above the platoon level, to retain their willingness to fight, and the

psychological ability of the opposing commanders to maintain their willingness to fight and ability to command.[3]

Intelligence requirements are based on doctrinal demands; the combat doctrine determines what intelligence the tactical commander needs. Five areas in basic doctrine particularly effect the intelligence requirements: the concept of commander's vision and intent; the three battlefield operating systems (BOS) of maneuver, fire support and intelligence; the planning process; the use of battlefield deception; and the fundamentals of operations.[4] These five areas are discussed in detail in every doctrinal manual for the heavy division, and they provide the keystone concepts for the development of intelligence requirements and for this monograph's assessment of efficiency.

U.S. Army heavy division doctrine is expressed in a series of field manuals, including FM 71-100, Division Operations, published in June 1990. This manual is the capstone document for how divisions are expected to fight and it was in effect during Operations Desert Storm and Desert Shield. FM 71-100 is supported by a series of Fire Support Manuals, a set of How-to-Fight manuals for echelons below division, and a family of manuals on intelligence operations, among others. All of these manuals derived their doctrine from the base doctrine expressed in the 1986 version of FM 100-5, Operations.[5]

Before assessing the divisional doctrine, a brief assessment of its source document, FM 100-15, Corps Operations, is appropriate. FM 100-15 does not specifically call for assessment of enemy psychological vulnerabilities. Indeed, it fails to call

for the assessment of any enemy vulnerability as a step in the planning or execution of tactical battles.[6] In its section on intelligence, the manual fails to identify enemy vulnerabilities as key elements.[7] In discussing the planning process and the role of deception, the manual offers some very limited insights, but advises the reader to consult FM 90-2 for more information on deception.[8]

The chapter on offensive operations is the only part of FM 100-15 that clearly discusses the impact of enemy psychological vulnerability. After a brief description of the purpose of offensive operations, the manual discusses the impact of enemy will on the battlefield, and defines defeat and destruction. It is only in the doctrinal definition of these terms that the idea of disrupting an enemy force through attacks on its moral will appears at all in the manual.[9]

The basic division doctrine, FM 71-100, is more precise concerning enemy psychological vulnerability. One of the principles in FM 71-100 is to concentrate forces. The very first part of concentration is to "understand enemy vulnerabilities, then locate them with intelligence collection assets and understand how they relate to enemy combat power, capabilities and intentions."[10] Although this defines enemy vulnerabilities as physical since they can be "locate(d) (by) intelligence collection assets," this is a clear requirement to understand and target enemy vulnerabilities.[11]

The division doctrine requires more specific identification and targeting of enemy psychological vulnerability than the corps

doctrine in several sections. For example, the division manual specifies destroying the "enemy ability and will to resist" by "defeating the integrity of his defensive system by driving into his rear to destroy" command and control, logistics, and other rear area assets. This doctrine, although more specific than the corps doctrine, is still far from definitive on the need to make enemy psychological vulnerability a key part of the majority of operations. The manual addresses enemy psychological vulnerability only in very limited examples, never as a general principle, except for a brief discussion under the principle of concentration.[12]

FM 71-100 also discusses shock effect, a term that is not mentioned in the corps doctrine. Shock action appears to be a synchronization of heavy division combat power to disrupt effectively the enemy's moral ability to fight coherently, but a precise definition is left to the reader. None of the manuals describing heavy division doctrine define this term.[13] The failure of doctrine to define shock effect indicates current doctrine's inability to adequately assess the role of moral force on the battlefield. If shock effect is an asset of the heavy force, it must be defined and used with precision. It is, however, a vain hope that more specific analysis of moral force, and enemy psychological vulnerability, is present in the military intelligence doctrine that supports the heavy division fundamental doctrine.

Reasons for the unwillingness of doctrine writers to prescribe assessment of enemy psychological vulnerability are

discussed by G. Murphy Donovan, a career U.S. Air Force intelligence officer, in a 1988 article in Strategic Review. Donovan wrote that enemy vulnerabilities, particularly vulnerabilities that defied counting and imagery intelligence, were often ignored in the American intelligence community for three reasons. First, scenario developers often based their work on symmetric ratios of force with little or no assessment of human qualitative differences. Additionally, most analysts were reluctant to assess some weakness that could not be proven, usually through quantification. Finally, the "politics of threat deflation," the American system of making the enemy appear greater than he probably is, provided the incentive for budgetary and force structure decisions, making it unusual for the analyst, or the doctrine writer, to emphasize human qualitative differences as vulnerabilities.[14]

Donovan's thesis is based on Cold War intelligence assessments, assessments he described as fatally flawed by a failure to understand the human nature of any threat force. For Donovan, the Soviet Threat became a basis for a intelligence doctrine based on worst case assessment of an enemy that has no vulnerabilities. This pervasive atmosphere of an inhuman and invulnerable enemy has diminished the importance of assessing psychological and other vulnerabilities of threat forces for U.S. intelligence systems.[15] The Soviet Threat was also the threat force agaianst which all U.S. Army doctrine has been written since the Truman Administration, a situation which has driven U.S. Army

doctrine authors to develop doctrine designed to defeat an enemy with few discerned vulnerabilities.

Donovan's three factors for the ignorance of enemy psychological vulnerabilities, as well as the need to deal with the Soviet Threat, affected U.S. Army intelligence doctrine authors. Current intelligence doctrine for the heavy division, like the fundamental doctrine, fails to adequately account for enemy psychological vulnerabilities. Intelligence doctrine is based on the Intelligence Preparation of the Battlefield (IPB) system. IPB is divided into two major subordinate parts, situation development and target development. Situation development is the "basic process by which intelligence is developed."[16] At first reading situation development appears to address enemy moral strengths and weaknesses for it includes "Knowledge of the enemy's operational, technical, and human weaknesses and personalities," but closer analysis shows that assessment of enemy psychological vulnerabilities receives very little emphasis in the doctrine.[17]

An example of this lack of emphasis is the part of intelligence doctrine concerned with situation development. This portion of IPB has five functions, one of which is Threat Evaluation, which "consists of a detailed study of enemy forces, their composition and organization, tactical doctrine, weapons and equipment, and supporting battlefield functional systems."[18] An analysis of this fourth function reveals little concern for enemy psychological vulnerabilities. In a table listing fifty-six categories of information, thirty-three of them are specifically

related to the enemy forces, only one category mentions "morale, health, discipline, political reliability." This category is the last in a set of nine categories on specific enemy unit effectiveness information.[19] In another list of order of battle data delineating nine factors, morale, cohesion, or any other psychological factors are not listed. Only the general term "combat effectiveness" is listed, with no elaboration.[20]

The second major part of IPB, target development, also gives little emphasis to targeting of enemy psychological vulnerabilities, with one exception -- a short discussion of shock effect. There are two objectives in target development, according to the 1987 manual. The first objective is to provide targeting data for the close battle fight. The second objective is to provide targeting data for the attack of second echelon forces in deep operations.[21]

An analysis of the chapter on target development, looking for psychological criteria for target selection and identification, reveals no mention of psychological vulnerabilities. The only specific listing is in a discussion of Target Value Analysis (TVA) where a "detailed analysis of enemy doctrine, tactics, equipment, organizations, and expected behavior" is mandated.[22] The reader is also advised to "focus efforts on (targets) to magnify the value of violence, shock, and uncertainty on the enemy."[23] Later, the reader is again advised "maximum shock effect is achieved through a well-coordinated attack on the enemy by fire, maneuver, jamming, and deception."[24] Despite these admonitions to understand the value of enemy psychological forces as targets,

nowhere in this foundation manual on intelligence is the reader educated how to analyze enemy forces for psychological vulnerabilities.

Donovan's criticism is as valid for the authors of U.S. Army heavy division intelligence doctrine as it is for the authors of the basic intelligence doctrine. The manuals that focus the basic intelligence doctrine in FM 34-1 into useful procedures for the division analyst are FM 34-3, Intelligence Analysis, FM 34-130, Intelligence Preparation of the Battlefield, and FM 34-10, Division Intelligence and Electronic Warfare Operations. These manuals do not emphasize identification or targeting of enemy psychological vulnerability.

FM 34-3, Intelligence Analysis, states "A number of factors, some tangible, others not, determines the combat effectiveness of enemy units. Of these factors, only the personnel and equipment strength lend themselves to factual analysis."[25] This manual does discuss altering estimates of the enemy based on analysis of strengths and weaknesses, but they should be quantifiable in order for the analysis to be "factual." The only elements of enemy psychological vulnerability clearly identified for identification and targeting is the command and control apparatus, including the "personality traits of the unit commanders." Morale, esprit, and political reliability are listed, but are not emphasized since they are not "tangible.[26] The analyst using this manual as doctrine is not required to devote much effort to analyzing enemy psychological vulnerability.

Doctrine for division IPB is fully discussed in FM 34-130, Intelligence Preparation of the Battlefield, and the emphasis remains analysis of enemy capabilities, not enemy vulnerabilities. The manual does discuss the role of specific enemy commander personalities, but primarily as targets for deception plans. With the exception of deception, this manual never addresses any enemy psychological vulnerabilities.[27] FM 34-10, Division Intelligence and Electronic Warfare Operations, also does not make enemy psychological vulnerabilities a key element in intelligence. It does clearly address the need to identify and target the enemy command and control apparatus, including discussions on the use of lethal and non-lethal fires to destroy or disrupt the enemy's ability to command. However, the bulk of the manual is doctrine for the actual employment of the intelligence and electronic warfare assets available to the heavy division, not the analysis of the enemy forces.[28]

Fire support doctrine adds little analysis of enemy psychological vulnerability in its discussion of targeting. The discussions of targeting include analysis of the vulnerability of enemy command and control apparatus, sometimes including brief discussions of enemy commander vulnerability to both lethal and non-lethal fires, but the basic process of targeting is a staff responsibility shared with the division G-2. The identification of particular enemy vulnerabilities is primarily, although not wholly, the function of the intelligence apparatus, not the fire support system or other portions of Army doctrine.[29]

Battlefield deception, another topic of U.S. Army doctrine, also discusses enemy vulnerabilities. U.S. Army deception doctrine is based on the "misleading of enemy decision makers."[30] This doctrine is very specific on the targeting of deception operations at a particular enemy commander, with valuable insights into the psychological process of enemy decision making, and the way American forces can influence the enemy psychologically. This is valid and valuable doctrine, but it is limited to the deception plan and is also limited in its discussion of the effects on the enemy leader. Missing from this doctrine is any substantive discussion of the effect of effective deception of the enemy individual soldier, primary group or large unit.[31] U.S. Army battlefield deception is based almost solely on the desire to achieve operational level surprise by deceiving a single enemy individual, the opposing commander. It fails to address the psychological advantages to be gained from deception at any levels other than the very highest.

Psychological operations doctrine addressed to the heavy division commander up to the time of Operation Desert Storm also did little to assist him in identifying enemy psychological vulnerabilities for targeting. PSYOPS doctrine included the use of loudspeaker teams to broadcast psychological warfare messages to enemy force to encourage surrender, but there was little or no linkage of the PSYOPs personnel with the IPB process required in the PSYOPs doctrine. Although the base doctrine for PSYOPs did identify enemy psychological vulnerabilities as a key element in waging warfare, the lack of a specified and dynamic link from the

PSYOP community to the intelligence community was not required by doctrine.[32]

U.S. Army doctrine at the time of Operations Desert Shield and Desert Storm did little to support targeting enemy psychological vulnerability on the tactical battlefield. This lack of emphasis on the "non-quantifiable" aspects of enemy combat effectiveness was evident in all doctrine, from the basic fundamental manuals through the tactics, techniques and procedures manuals. The U.S. Army had trained to fight the Soviets, and the U.S. Army believed that emphasis should be placed on quantifiable equipment, the enemy capabilities, and threat doctrine rather than the human dimension of combat. Donovan's assessment of the reasons for ignorance of enemy vulnerabilities is valid for the authors of U.S. Army heavy division doctrine, particularly the general ignorance of enemy psychological vulnerabilities.

PSYCHOLOGICAL DYNAMICS OF THE EMPTY BATTLEFIELD

Modern combat is in essence a human struggle. The modern, "empty" battlefield, where the enemy is often totally invisible, where death comes suddenly and with great violence, and where the first act of a combatant is to seek cover and disperse (thereby denying himself the moral cohesion of comradeship), is an arena where the moral forces are more critical and vulnerable than ever before.[33] In the words of John Keegan, contemporary British military historian, it is

> as if the arms-manufacturers had succeeded in introducing a new element into the atmosphere, compounded of fire and steel, whose presence rendered battlefields uninhabitable, giving them that eerily empty look which, to an experienced twentieth-century soldier, is a prime indicator that danger lies all about.[34]

Keegan believes the recent changes in warfare have brought battle to where it has "already abolished itself."[35] Mechanized armies, forced to fight in continuous operations, under conditions that have removed all normalcy and humanity from the battlefield, may collapse from sheer physical and psychological exhaustion after the passage of only a few days, making war no longer an effective means of inter-state policy.[36]

If modern combat is essentially the province of moral forces, U.S. Army intelligence doctrine should provide commanders an accurate picture of enemy psychological vulnerability. This picture should be based on careful analysis of the reality of the modern battlefield, the impact of modern combat on the human being and military organization, and analysis on how to attack enemy psychological vulnerabilities. Recent historical and psychological writings clearly state modern combat makes greater demands on human psychology than warfare of the past, and the future appears to offer more lethality and psychological impact than ever before.[37]

The changed battlefield is a lonely place. Modern, lethal firepower requires dispersion and cover for survival, so the individual can no longer gain support from his comrades' physical proximity. While separated from his comrades, the modern soldier is assaulted by a veritable nightmare of confusion, noise, lethal

fire, and an overwhelming sense of forlorn loneliness. (One exception to this sense of loneliness is the crew of an armored vehicle or crew-served weapon.)[38] Warfare is no longer just a daytime activity, continuous operations are fully possible, adding significantly to the stress of combat and the inability of the soldier to rest either mentally or physically. The modern battlefield is also non-linear, there is no such thing as a safe rear area. The soldier can be exposed to death everywhere, all the time. In this atmosphere of destruction, the modern soldier is rendered effectively leaderless, necessitating the development of self-discipline rather than externally imposed discipline. The result of this hell on earth are psychological casualties sometimes even outnumbering the physical casualties.[39]

Warnings about the changed battlefield, based on the impact of the breech-loading rifle, began in the mid-nineteenth century. Perhaps the most eloquent of the advocates of the need for more resilient moral force was the French infantry officer Charles Ardant du Picq. Du Picq, born in 1831 and killed in 1870 by a Prussian artillery fragment, stressed the increased need for resolute commanders and soldiers on a battlefield where the approach of death was sudden, often unexpected, and usually delivered from a nearly invisible enemy.[40] Additional warnings about the effect of increasing lethality on the battlefield were promulgated by Ivan Bloch in the years immediately preceding World War I. Bloch believed that the increased lethality of the modern breach-loading, magazine fed, high-velocity rifle would create a beaten zone over which no army could cross. If an army were able

to cross this zone of death, its capability as a fighting force would have been destroyed due to the horrific casualties suffered from a still unseen enemy force.[41]

Among the trenches of the World War I Western Front, an entire generation of English writers were introduced to the "forlorn loneliness of the front line."[42] Lord Moran, one of the more influential writers on psychological casualties from World War I, identified four areas of psychological dominance: the psychological will to fight of the individual soldier, the primacy of small groups of comrades, the effect of unit cohesion on willingness to fight and the importance of high level leadership.[43]

During the inter-war years, military doctrine writers grappled with the problems associated with modern warfare and psychology. The German Army solution was the continued development of tactics designed to disrupt the opponent's ability to withstand the moral shock of rapidly increasing tempo throughout the depth of the battlefield.[44] Before its entry into World War II, the American Army authors of FM 100-5, Operations, described success on the modern battlefield resulting from psychological shock.[45] Analysis of veterans of the Abraham Lincoln Brigade during the Spanish Civil War, done by a team of scientists from Yale University, revealed the power of fear and terror over individual will on the modern battlefield.[46]

The effects of modern firepower on American troops in combat during World War II were analyzed by SLA Marshall. Although his methods are now questioned, his conclusions included the prime

importance of the small group cohesion on fighting effectiveness and the desire of the individual soldier to survive combat both physically and psychologically through avoiding being thought a coward. The most controversial aspect of S.L.A. Marshall's work was his evidence that only twenty-five percent of American infantry ever fired their weapons in combat.[47]

Experiences in the Korean, Vietnamese, and Arab-Israeli Wars have further refined theories about unit cohesion and morale on the modern battlefield. Four specific areas of moral force on the battlefield emerge: the role of the individual as a combat effective entity, the power of the primary group of comrades to sustain morale, the effect of unit cohesion on combat effectiveness and the larger unit commander(s) ability to effectively command and control his force.

On the modern battlefield, the role of the individual in combat has markedly increased in importance, and in vulnerability, in the last fifty years. The individual is the basic building block of any military unit; his decision to fight is the key ingredient for a combat effective unit. The "willingness to fight, and to persevere in fighting," is one psychologist's definition of morale.[48] The individual has two options, to fight or not to fight, expressed usually as the fight or flight reaction to fear. On a modern battlefield, this decision is usually made alone. An analysis based on the Arab-Israeli 1973 war stated that the individual fought for four reasons: confidence as a soldier, self-control, self-discipline, and understanding of the situation and his role in the fight.[49]

The environment of the modern combat soldier can be one of nearly constant fear and stress. The duration of combat is usually assessed as a more critical stress than the severity. Several factors cause an unusually high level of stress. Among these are isolation from fellow soldiers, a perception of being surrounded, a belief that wounded soldiers will not be evacuated, and a belief that the fight is hopeless.[50]

Several factors ameliorate the stress of combat for the individual. Perhaps the most critical at the purely individual level is the ability to rest, to be removed in some fashion from the stress of fear. The lack of rest, of recovery, is what makes duration such a critical element of combat stress. Without rest all men will disintegrate under the stress of combat.[51] Another factor that reduces stress is the level of experience in combat and quality training before entering combat. The more realistic the training, the lower stress is in combat. Experience is beneficial until it becomes a matter of excessive exposure, then the soldier may suffer psychological collapse from too much experience.[52]

Apparently the most critical factor that makes a man fight, however, is his close relationship with a small group of his fellow soldiers. Psychologists refer to this bond as the primary group. The power exerted by the primary group is due to the psychological power it has over the individual mind. The individual, once he has identified with a primary group, no longer feels the need to make personal decisions to fight or flee. This decision, the most basic of all battlefield decisions, is already

made by the endangerment of the group. Because of his desire to protect his comrades, added to the existence of mortal danger, the ability to respond by fighting, and what one author called the "passion for self-sacrifice," the individual will fight to save his fellows.[53] Added to these considerations, the soldier will also fight to prevent his fellow soldiers from thinking less of him as a fellow soldier. This need to preserve self-identity is described by many writers.[54]

Two factors can diminish the fighting ardor of the primary group. Shalit identified one in his study of the 1973 Arab-Israeli War. Cohesion of the primary group is based on survival of the group, the attraction is to survive as an intact group, not necessarily to accomplish the mission set by the officers. This may cause disruption of the primary group cohesion within a larger organization, if other ties with the higher unit disintegrate. Also identified was the problem experienced when a primary group is exposed to danger for too long a duration. The primary group may see its survival threatened by continued resistance and may decide as a group to flee.[55]

Unit Cohesion, the desire by individuals to follow the established norms of a group larger than the primary group, is essential for effective military operations. Although there is disagreement about the size of the unit that can truly be called a cohesive unit, this appears to depend on the approach to unit cohesion taken by the particular army. For the British in recent history, it is a tradition of the Regiment; for the U.S. Army it is the division; for the U.S. Marine Corps it is the Regiment; for

the Israelis the cohesive unit is the battalion. Whatever the size of the particular unit, the unit is made a cohesive organization by the leadership efforts of the individual leaders and by the unit traditions. Leadership that shares hardships with the soldiers, that is trusted by the soldiers to do their job competently, that has experienced success, is leadership that binds the cohesion of a unit. The tradition of the unit should also be a tradition of success, be it distant historical past or recent battlefield experience.[56]

Like primary groups, large units can also lose unit cohesion. During the Somme, the British employed divisions until they "had no further fighting value" as a cohesive unit. Large units may also lack experience, and this "greenness" may result in wholesale collapse under some circumstances. Units have what one writer called the "Unit Moral Envelope," the area directly to the flanks and rear of a linear unit that, when threatened by enemy attack, will cause the disintegration of the entire unit.[57]

The Unit Moral Envelope also includes the effect of enemy activity on the psychology of the unit commander. His decision making ability, which in turn affects both their subordinate groups and individuals, is the fourth major aspect of psychological vulnerability on the modern battlefield. Military commanders at all levels are effected like any other individual on the battlefield given similar circumstances. General officers in World War II frequently collapsed and became psychiatric casualties from the stress of their duties. Commanders can also be targeted during operations, either physically like Admiral

Yammamoto, or through psychological pressures like that exerted by the German *Blitzkrieg* tactics.[58]

Moral collapse of the opposing commander is often seen as the goal of an operation, either as a result of surprise, increasing tempo, or attacks on his command and control apparatus. Recent developments in command, control, communications, and computers has actually increased the fragility of the psychological component of commanders. Decisions are demanded of them at a more frequent pace than before. Also, the commander now may have an increased need to always make exactly the right decision, and make it immediately, since the automation of the command apparatus may give subordinate commanders less flexiblity. Stress on the highest level commanders has lead to hasty and improper decisions like the Japanese decision to launch an offensive during the Okinawa campaign. This decision, taken in large part simply to relieve the tension at army headquarters, resulted in the slaughter of several thousand Japanese soldiers.[59]

Identification and targeting of enemy psychological vulnerabilities are possible. The four major areas of moral effect, the individual, the primary group, unit cohesion, and the psychological vulnerability of the commander are all subject to analysis and attack. Identification of enemy psychological vulnerabilities is primarily a function of understanding how the modern battlefield affects individuals and units, and understanding the training, experience, cohesion, and battlefield environment of the opposing force. Of the four areas of moral effect, the analyst attempting to discern enemy psychological

vulnerability should concentrate his analysis on the individual enemy soldier, the unit cohesion of the enemy units, and the vulnerabilities of the enemy commanders. The primary group, since it owes its very existence to individual identification with only three to five other soldiers under conditions of severe stress, is usually not a vulnerability.

The psychological vulnerabilities of individual enemy soldiers can be assessed by analyzing their training and experience levels, their expectations of the battlefield, and their cultural linkage to expressed goals. Particular emphasis should be placed on analyzing their ability to withstand isolation, surprise, failure, inability to respond effectively to attacks, continuous stress, and the fear of catastrophe. Each of these areas should be subjects of data base development for the IPB process, and in turn they can serve as areas to be targeted.[60]

The psychological vulnerabilities of unit cohesion can also be assessed and targeted. For example, a green unit, untried by combat and with limited training and experience, can be targeted with more immediate effect than an experienced unit, since it will become combat ineffective under less pressure than the more experienced unit. The assessment of unit psychological vulnerability is difficult, however, due to the influence of the primary group. Large units can act like a collection of primary groups when the larger unit begins to disintegrate; each primary group then may act only in concert with its particular situation.[61]

Analysis of the vulnerability of enemy commanders is the easiest area of psychological vulnerability to assess, and the simplest area to target as well. For these reasons, it is also the only area of psychological vulnerability addressed in any detail at all in American Army doctrine on the eve of Operations Desert Shield and Desert Storm. However, even this area can be improved through a more complete analysis of the psychological pressures and environment of the enemy commander.

Analysis of the vulnerable nature of opposing force psychological vulnerabilities on the modern battlefield is a fertile ground for American Army doctrine. Opposing forces, faced with American high-technology weapons systems and a trained intelligence staff capable of identifying and targeting enemy psychological vulnerabilities, could face a threat far more efficient than a threat that only attacks the material of combat and not the man.

HEAVY DIVISION EXPERIENCE ON THE EMPTY BATTLEFIELD -- OPERATIONS DESERT SHIELD AND DESERT STORM

When Saddam Hussein invaded Kuwait on August 2, 1990, American Army doctrine prescribed attacking enemy psychological vulnerability specifically through deception and psychological warfare. Beyond the needs of deception and psychological warfare, doctrine discussed targeting enemy psychological vulnerabilities only in very general terms. IPB doctrine did not emphasize the identification of enemy psychological vulnerabilities and the use

of enemy psychological vulnerabilites to alter or modify friendly courses of action was absent from corps level doctrine, and only addressed briefly in division doctrine. However, aggressive execution of AirLand Battle Doctrine, itself based on some of the basic principles of the psychological dimension of warfare, crushed the psychological will to fight of even the best Iraqi soldiers.[62]

General overestimation of the fighting ability of the Iraqi army combined with a deliberate desire to never underestimate the enemy, stemming from the Vietnam experience of many senior Army commanders, inhibited intelligence analysis of Iraqi psychological vulnerability. BG John A. Leide, Central Command (CENTCOM) J2, said "After Vietnam, I vowed to myself that I would never underestimate my enemy again."[63] Efforts to ensure success in the campaign by using maximum overwhelming force, and to keep casualties as low as possible, also affected the impact of echelons above corp (EAC) intelligence assessments. Decision makers appear to have altered few decisions due to intelligence assessments of Iraqi psychological vulnerability.[64] The intelligence analysts at the highest levels seem to have overlooked such simple factors as the Iraqi marginal performance in the Iran-Iraq War and even the Iraqi lack of desert warfare experience.[65]

The inability or unwillingness to accurately assess Iraqi fighting capability seems to have even survived the Iraqi disaster at Khafji at the end of January 1991. Despite the over complicated, and grossly unsuccessful, Iraqi armored attack on

Khafji, despite the surrender of more than four hundred Iraqis with only a loss of some seventy Iraqi casualties at Khafji, and the success of the Saudi and Omani attack on the forces from the Iraqi 5th Mechanized Division, the battle for Khafji did not affect the intelligence estimate at either CENTCOM or Army Component Command CENTCOM (ARCENT).[66]

The collapse of Iraqi mechanized forces at Khafji was not the only indicator of Iraqi psychological vulnerability before the ground offensive began. Across the front, surrenders of large numbers of Iraqi front-line infantry troops occurred from 15 February until the start of the ground offensive, from the Marines in the East to the 1st Cavalry Division at Wadi al Batin. On 17 February, some forty-five Iraqis from the 45th Infantry Division surrendered to helicopters of the 101st Airborne Division, followed by the surrender of an intact battalion to the same division's helicopters and PSYOP loudspeaker teams on 20 February. Still CENTCOM and ARCENT continued to assess the Iraqi capability to fight as "substantial."[67] This was in part due to a valid concern over the Republican Guard Forces (RGFC), the highest quality element of the Iraqi ground forces.[68]

The assessment of Iraqi ground forces capability by CENTCOM and ARCENT on the eve of the ground offensive remained substantially the same as it had been since the start of Operation Desert Shield. Although detailed Battle Damage Assessment (BDA) had been assessed on every Iraqi division in the Kuwaiti Theater of Operations (KTO), the overall assessment was that the Iraqis would fight. Although Schwarzkopf appeared to believe that the

Iraqi Army was on the verge of collapse, this assessment was not disseminated through intelligence channels.

> Having endowed the enemy with legions that did not exist and martial virtues they did not possess, the Americans were obligated to treat the coming battle as one akin to Armageddon.[69]

Only after the ground offensive actually began, and the Marines and XVIII Airborne Corps experienced massive success, did the (CENTCOM) and (ARCENT) commanders begin to realize the fragile nature of even the Iraqi front-line infantry divisions.[70]

The ARCENT intelligence apparatus, which divisions and corps relied on for the majority of their intelligence, was consumed by the BDA requirements of the air war. Given the mission to assess combat effectiveness of the Iraqi units during the air offensive, ARCENT G2 devoted most of their efforts to this mission, decreasing the time and resources available for development of intelligence for the tactical commanders below ARCENT. The actual BDA process concentrated on counting artillery pieces and tanks, something ARCENT's extensive imagery resources could do with relatively concrete results. The daily count of tanks and artillery received more attention, and resources, than the analysis of Iraqi psychological vulnerability. An accurate assessment of the true combat effectiveness of the Iraqi divisions required an analysis of Iraqi psychological vulnerability as well.[71]

ARCENT G2 also focused on imagery intelligence (IMINT), both because of the desire to count individual vehicles for the BDA requirement and because of a lack of human intelligence (HUMINT)

resources in theater. The concentration on IMINT decreased the resources available to conduct psychological vulnerability analysis.[72]

The failure of EAC intelligence to analyze Iraqi psychological vulnerability affected the corps and divisions' capability to assess this vulnerability for themselves. Doctrine specifies higher headquarters intelligence as a major source for division intelligence through Tactical Exploitation of National Capabilities (TENCAP).[73] In Operations Desert Shield and Desert Storm, the corps and divisions were even more dependent on EAC assets then doctrine required. In support of the deception operations, the divisions in both corps were required to remain well back from the border and were unable to use most of their intelligence gathering resources until the ground war actually began.[74]

Unlike EAC efforts in intelligence assessment of psychological vulnerabilities, EAC efforts in psychological warfare were a mixture of success and failure. PSYOP personnel in theater either supported the tactical units with loudspeaker teams or directly supported CENTCOM with planning and executing operational PSYOP activities. With the exception of PSYOP directed to surrender of Iraqi soldiers, strategic PSYOP was a failure, due at least in part to the plan being "lost in the swirl of competing actions" from 20 September to 14 December 1991 when it was sent from CENTCOM to the Joint Chiefs of Staff for approval. There was also little coordination between the PSYOPs community and the Intelligence community at EAC.[75]

However, EAC deception operations, using Iraqi psychological vulnerability, were a major success. The deception plan, executed by deception elements from both corps as well as joint assets, and by the troops of the 1st Cavalry Division, convinced the Iraqis that the major Coalition attacks would be direct assaults into Kuwait. This was an effective use of enemy psychological vulnerability, fully in keeping with US deception doctrine. However, this success was limited to echelons above division.[76]

The failures, and successes, at EAC continued at Corps level, both in the XVIII Airborne Corps and the VII Corps.[77] XVIII Corps conducted successful deception operations, but had difficulties with both PSYOP planning and intelligence assessment of the Iraqi psychological vulnerability. For example, the XVIII Corps was precluded from conducting its own intelligence collection operations until 15 February, and was "unable to develop a good picture of the battlefield" until then.[78]

VII Corps also had a successful deception operation, but suffered from similar problems with both PSYOP planning and assessments of Iraqi psychological vulnerability.[79] VII Corps was fortunate that the deception operations along the Kuwaiti border developed worthwhile intelligence about the Iraqi front line infantry units and the strange absence of Iraqi artillery fire in response to Coalition artillery raids.[80]

The VII Corps moreover, had an assessment problem that did not affect the XVIII Corps. While XVIII Corps was planning on conducting an exploitation attack into generally unoccupied

ground, the VII Corps was planning on conducting a deliberate attack into three distinctly different types of Iraqi units. The front line infantry divisions, all conscripts and primarily Shiite and Kurds, were assessed as the weakest of the Iraqi ground forces. Further north in the VII Corps zone of attack were the mechanized and armored Iraqi regular army divisions, better quality than the infantry, but still conscripts. The major problem for VII Corps analysts was the Republican Guard Forces Corps (RGFC), the "elite" of the Iraqi army. All three types of troops were distinct, with different capabilities and vulnerabilities, and each presented the VII Corps with unique assessment problems.[81]

PSYOPs failures at corps also inhibited the use of PSYOPs personnel at division. PSYOPS personnel were most often assigned as part of the G5 staff to assist in civil-military operations, instead of assigning these officers to the G3 operations staff. Additionally, all PSYOPs planners were assigned to the divisions only upon deployment to the Gulf, since no Army divisions have Active Component soldiers assigned to G3 staffs from the PSYOPs community. This hindered integration of PSYOPs into the training and planning of the divisions, even after deployment to the theater.[82] Tactical PSYOP did have success with loudspeaker teams assigned to every combat brigade in theater. These teams encouraged many Iraqis to surrender, including the surrenders by Iraqi battalions to American helicopters already mentioned.[83]

Coupled with the failures at echelons above division was a general failure to accurately identify enemy psychological

vulnerabilities at the division level. An analysis of assessment of Iraqi vulnerability reveals that this failure occurred in divisions in both corps. However, violent execution by the heavy divisions of AirLand Battle doctrine resulted in exploitation of actual Iraqi psychological vulnerabilities despite the lack of IPB analysis of these vulnerabilities.

The 24th Mechanized Infantry was the only heavy division in XVIII Corps. The 24th was the second major unit to arrive in Saudi Arabia, and therefore was the heavy division with the most time to develop its intelligence estimate of the Iraqis. The clearest example of enemy psychological vulnerability analysis is in a document prepared 25 September 1990. This intelligence estimate lists Iraqi vulnerabilities including "C2I, night fighting ground capability and infantry morale."[84] However, the perception of enemy psychological vulnerabilities then disappeared from the intelligence estimates. When the OPLAN for Desert Storm was published, on 14 January 1991, there was no references to enemy morale. Enemy vulnerabilities are identified, including inability to synchronize air and ground attacks, general C2, logistics, and the night capability disadvantage, but no mention is made of enemy psychological vulnerability or targeting in the entire OPLAN.[85]

The mission assigned to the 24th was to "smash into the enemy rear and destroy their will to fight," in the words of the division commander.[86] While preparing for this mission, the division commander briefed the Secretary of Defense, including his assessment that the ground forces would "destroy the Iraqi army in

ten days to two weeks."[87] Although the intelligence estimates failed to describe Iraqi psychological vulnerability after the initial estimate, it seems the leadership of this division understood both the psychological basis of AirLand Battle doctrine, and the weakness of the Iraqi Army and the strength of the coalition forces.

The 24th Division execution of Operation Desert Storm was characterized by aggressive speed and massive fires, basic components of AirLand Battle doctrine. The psychological impact on the Iraqi soldiers of a heavy division maneuvering across "impassable ground," appearing in a totally unexpected direction, and with a tempo of combat operations that "put (the division) in a different operational mode than the Iraqi force," was devastating. Tactical differences in night fighting ability, the delivery of crushing firepower superiority, and the sheer apparent indestructibility of the M1A1 tank, "simply stunned them psychologically."[88]

The experience in VII Corps was also effective devastation of Iraqi psychological vulnerability, but in several areas moderation may have diminished the effect. VII Corps included the 1st United Kingdom (UK) Armored Division, the US 1st Infantry Division (Mechanized), the 1st Armored and 3d Armored Divisions. The 1st Cavalry Division was initially CENTCOM reserve, and was released to VII Corps nearly at the end of the ground battle. These divisions developed their plans for the attack based primarily on intelligence estimates provided by ARCENT and VII Corps. As described above, these estimates were limited in their

assessment of Iraqi psychological vulnerability. Detailed information on the VII Corps division intelligence estimates is currently classified, but open sources reveal little difference in estimates of Iraqi capability among the plans for the divisions.[89]

These VII Corps attack began earlier than planned. This controversial early attack by the VII Corps, ordered by Schwarzkopf when initial reports from the Marines and XVIII Corps identified Iraqi collapse, caused problems with synchronization among the units of VII Corps. Apparently, although the Corps had multiple branch plans, there was no branch plan for an early assault based on crumbling Iraqi morale.[90]

The tempo of VII Corps operations, even after the initial confusion of the early attack dissipated, was slow enough that some Iraqi units were able to maintain a semblance of discipline in their units, and react to the VII Corps moves. There are three influences which slowed the tempo of the divisions of VII Corps. A desire to carefully synchronize operations on several occasions caused "attacks pressed without pause" to actually require six or seven hours before the attack commenced. On two occasions this happened when division commanders, in order to "maintain the tempo," passed fresh brigades through brigades that were still combat effective, although they had just had firefights with Iraqi forces.[91]

Fratricide, particularly towards the end of the offensive, was the second slowing influence on the divisions. The official history blames the fear of "blue on blue" as early as 26 February for "dampening of audacity and dash throughout the remainder of

the campaign. On 27 February, the Corps commander ordered the 1st Infantry Division, moving rapidly up to encircle RGFC forces, to halt for the night out of fear of fratricide.[92]

Fear of fratricide was certainly understandable, but the corps also appeared unwilling to plan for major moves or attacks at night. Several large fights occurred at night, fortunately for the much better night-equipped Americans, but on two occasions, entire divisions were halted to stop them from making night attacks. The first incident was MG Thomas Rhame's requested "push on without delay" by his 1st Infantry Division on 24 February. This was approved, but only after at least four hours had passed, and then the movement was halted for the night, apparently out of a failure to rehearse night breaching.[93]

The second incident was the 1st Armored Division attack on Iraqi elements in the village of Al Busayh. Although Apache strikes had resulted in Iraqi surrenders from the objective area on the afternoon of 25 February, the division commander requested permission to not attack at night, out of concern for a night dismounted infantry fight. The Corps commander agreed, giving the division commander a requirement to be through with the fight by 0900 on 26 February.[94] Considering the incompetence of Iraqis at night, and the widely accepted superiority of American night fighting equipment, these decisions were certainly conservative. Some commentators have called the Gulf War the "first true 24 hour war in history."[95] It could have been, but it was not.

Although it was not successful at maintaining continuous ground operations at night, the VII Corps was extremely successful

at massing artillery army aviation and airstrikes, frequently crushing Iraqi units and forcing them to flee even without ground contact. Massing fires, in both deep and close operations, not only kept friendly casualties low, but practically obliterated numerous Iraqi units. Even the "elite" RGFC was psychologically crushed by overwhelming direct and indirect fires. The RGFC may not have surrendered as readily as the Iraqi regular army troops, but their destruction by AirLand Battle doctrine, training, equipment, and soldiers, was as complete.[96]

> The fight at Medinah Ridge was waged with tactical acumen and devastating firepower, reducing the enemy to a pathetic rabble. Again the Americans displayed overwhelming superiority in weaponry, intelligence, gunnery, combined arms tactics, and leadership. It was, in short, like the war itself: a brilliant slaughter.[97]

The heavy divisions of the U.S. Army that deployed to Saudi Arabia for Operation Desert Shield and fought in Iraq and Kuwait during Operation Desert Storm did not accurately identify or target enemy psychological vulnerabilities through their intelligence doctrine or procedures. This failure began at echelons above corps, and never recovered during the ground war. Success, often brilliant, was achieved in operational deception and tactical PSYOPs loudspeaker operations. During the ground offensive, the crushing superiority of American doctrine, equipment, training, and morale obliterated the already brittle Iraqi psychological will to fight. This obliteration occurred because well trained and highly motivated professional soldiers maintained a tempo of operations the Iraqis could not withstand. The US Army heavy divisions, designed to defeat the Soviet Forces

in Germany, overwhelmed the Iraqis with firepower at every opportunity and destroyed Iraqi cohesion through deep attacks, using the practically invulnerable, psychological shock of the AH-64. This overwhelming victory was not without lessons, particularly concerns about the problems with intelligence and the apparent unwillingness of some senior leaders to press their psychological advantage over the Iraqis.

FUTURE US ARMY HEAVY DIVISION IPB DOCTRINE

The failure of American forces to accurately assess Iraqi strength and weakness during the Persian Gulf war is an experience the American military may not be able to afford in the next war. The Army must correct its doctrine, its training, and its basic theory about enemy assessments for the next war. In an era of swift, decisive war and simultaneous, or near-simultaneous, victories in two mid-level regional contingencies, American military forces must be employed with precision and skill, not purely overwhelming force.[98]

This is not to argue, with the adherents of what is called "maneuver warfare," that war should not be fought with overwhelming force at the tactical level. The actual targeting of enemy forces to disrupt their psychological coherence on the battlefield usually relies on just that overwhelming force. The need is for American tactical planners to accurately assess the enemy capabilities and vulnerabilities so as to employ the proper

amount of forces and firepower to defeat, or destroy, the enemy.[99] To do this, the US Army should change its doctrine for IPB by increasing the attention paid to the estimation of enemy psychological vulnerabilities, and we should alter our basic theoretical concept of over-estimation of enemy capability.[100]

A new edition of FM 100-5, Operations published on 14 June 1993, was designed for the new realities of the Post-Cold War Era. This manual takes a fresh look at the dynamics of the modern battlefield, future American wars will be won by defeating the opponent's will to continue resistance. The Army will defeat its enemies, not through superior numbers, nor superior firepower, nor a combination of firepower and maneuver, but through "focusing all combat operations on the enemy's will."[101]

While FM 100-5 (1993) establishes will as the ultimate target in war, the manual fails to maintain a clear and cogent focus on the psychological vulnerability of the enemy. The manual states that the goal in operations is to "confuse, demoralize and destroy" the enemy and that the purpose of initiative is to prevent the enemy from recovering from the "shock of the attack," but these general statements are not supported by more specific discussions in the manual. For example, the definition of the principle of "Objective" is limited specifically to "physical objectives." The discussions of surprise, estimates, commander's intent, concept of the operation and decisive points do not even mention psychological vulnerability, moral will or cohesion, friendly or enemy.[102]

Although the manual bluntly states "Ultimately, the focus of all combat operations must be the enemy's will" it concludes this very section by stating that the focus should be the will of the enemy leader because "leaders are the main source of will."[103] The will to fight comes only in part from the leaders of an armed force. The manual also has a section titled "The Psychological Perspective," but it is solely concerned with maintenance of friendly will on the modern battlefield; it does not address enemy psychological vulnerability.[104]

Heavy division IPB doctrine has seen minor changes since Operation Desert Storm, with the publication of a draft edition of FM 34-130 in February 1993. This new manual changed some details of the IPB process, but the general trends in threat evaluation did not change. The emphasis on numbers and precisely targetable locations and the lack of emphasis given to the enemy psychological vulnerabilities have not changed since the earlier manual.[105] Another recent document is FM 34-8, Combat Commander's Handbook on Intelligence, (September 1992). This manual also fails to address threat psychological vulnerability, even in a section on EPW interrogation and another section on Priority Intelligence Requirements establishment.[106]

More sweeping changes have been made, however, in the importance to divisions of EAC intelligence. The role of the Joint Intelligence Center, designed and manned to provide CINCs, corps, and divisions with intelligence, may be, as some authors have termed it a "Revolution in Military Intelligence."[107] Reacting to the post-Cold War world, the intelligence community,

in a study titled "MI Relook," determined that intelligence must be gathered and analyzed at echelons above corps to be timely and productive. The information, and analysis, will be transmitted to echelons below joint through automatic systems. Although the study also concluded a better balance of disciplines was needed, particularly language skills, the joint intelligence centers "will be key components (since) tactical forces will have to rely more heavily on intelligence from national, service and theater-level organizations."[108] Even the gains in HUMINT will be primarily at EAC. Another growing concern in the intelligence community is the need for precision targeting data for fires, using automatic systems and "direct feeding of priority targets to shooters." Additionally, the future of intelligence summaries and reports is something called a "Graphic Intelligence Report," where information on the enemy is covered in a graphic format, for ease of transmission and understanding.[109]

PSYOP doctrine also has a new manual, and a new doctrine for the employment of PSYOP forces in a contingency theater. Like intelligence, the reaction of the PSYOP community has been to consolidate activities at the Joint level. Tactical loudspeaker teams will still exist, but the focus for planning and execution of PSYOPS is no clearly, at the Joint commander level. Division may even lose their allocations for augmentee planners in the future.[110]

American Army combat doctrine has not changed as rapidly as intelligence or PSYOP, but signs of the future are evident. For example, discussions on targeting have concentrated on speed and

precision, not on the nature of the targets themselves. Concerns on the over-use of simulations by doctrine developers have also appeared, particularly focusing on the general inability of simulations like the National Training Center (NTC) or the Battle Command Training Program (BCTP) to simulate psychological vulnerability at any level. Calls for broad changes in doctrine have not yet surfaced.[111]

The possibilities for the future are now thought by some to be embraced by a concept entitled the "Military Technical Revolution." This concept involves wide array sensors linked almost automatically to firing units to provide immediate precision strike capability. Although not yet official doctrine, the concept has recently been endorsed in Military Review by GEN Gordon R. Sullivan, the Army Chief of Staff. The concept deals with a technology-based future force, with apparently little room for discussion of the primacy of the psychological component of the battlefield.[112]

There is an alternative. The essential nature of enemy psychological vulnerability, based on the single unchanging component of warfare, man, offers intriguing possibilities for the future US Army. Some concepts have already been explored, for example a "Vulnerabilities Recognition Cell" at corps level, changes to doctrine to make strikes against enemy morale a key ingredient, and efforts to bring the human nature of war into the current simulations used by the Army.[113] These are, however, only nascent changes to doctrine, much work can still be done.

The psychological dimension of combat remains the most basic ingredient for success or failure in warfare. Current U.S. Army doctrine does not adequately address the commander's need for intelligence assessment of enemy psychological vulnerabilities. Doctrine also does not adequately address the targeting of enemy psychological vulnerabilities through fire or maneuver. The basic combat doctrine of the Army discusses the primacy of the moral dimension, and does identify the need for shock effect on the battlefield, but Intelligence Preparation of the Battlefield doctrine does not satisfactorily prepare the psychological battlefield.

[1] For two recent works concerning the importance of doctrine for the American Army, see Brian A. Keller, "Seeing the AirLand Battle: Can the Heavy Division Military Intelligence Battalion Do Its Job?" (School of Advanced Military Studies Monograph, US Army Command and General Staff College, First Term, Academic Year 1991-1992) and Gordon F. Atcheson, "AirLand Battle Doctrinal Tenets in Operational Art: Do We Need an Output Oriented Tenet that Focuses on the Enemy?" (School of Advanced Military Studies, Advanced Operational Studies Fellow Program Monograph, US Army Command and General Staff College, Academic Year 1989-1990). Keller discusses the inability of the heavy division intelligence assets to accomplish the mission required by doctrine. Atcheson discusses definitions of doctrine, and the limitations imposed by the current doctrine's fixation on process and quantification. The definitions used in this paragraph are from Atcheson, 4-5 and from U.S. Army, FM 100-5, Operations (Washington: Department of the Army, 1993), G-3.

[2] For example, the Israelis determined that five days intense struggle on the Golan in the 1973 War practically destroyed even victorious Israeli units from sheer exhaustion and fatigue. The heavy division operations of Desert Storm, in contrast, lasted only four days in total. See Chris Bellamy, The Future of Land Warfare, (New York: St. Martin's Press, 1987), 287 for a discussion of the Golan engagements effects on unit exhaustion and collapse.

[3] This definition is from Lord Moran, The Anatomy of Courage, (London: Constable and Company, 1945; reprint ed. Garden City, NY: Avery Publishing, 1987), S.L.A. Marshall, Men Against Fire: The Problem of Battle Command in Future War, (Originally published 1947; reprint ed. Gloucester, MA: Peter Smith, 1978), Anthony Kellett, Combat Motivation: The Behavior of Soldiers in Battle, (Boston: Kluwer & Nijhoff, 1982) and Ben Shalit, The Psychology of Conflict and Combat, (New York: Praeger, 1988).

[4] These five areas were selected for analysis. A review of the doctrine determined that assessment of enemy vulnerabilities, as part of the friendly intelligence and decision making processes, was only discussed in these five areas.

[5] The fire support manuals include FM 6-20, Fire Support in the AirLand Battle (1988), FM 6-20-10, Tactics, Techniques and Procedures for the Targeting Process (1990), and FM 6-20-30, Tactics, Techniques and Procedures for Fire Support for Corps and Division Operations (1989). The Intelligence process is supported by FM 34-1, Intelligence and Electronic Warfare Operations (1987), FM 34-3, Intelligence Analysis (1990), FM 34-8, Combat Commander's Handbook on Intelligence (1992), FM 34-10, Division Intelligence and Electronic Warfare Operations (1986), FM 34-25, Corps Intelligence and Electronic Warfare Operations (1987), FM 34-52, Intelligence Interrogation (1992) and FM 34-130, Intelligence Preparation of the Battlefield (1989). Other manuals that address relevant issues are FM 33-1, Psychological Operations (1993) and

FM 90-2, Battlefield Deception (1988). FM 100-5, Operations, published in 1986, mandated AirLand Battle doctrine, an offensive mind set that prescribed the tenets of initiative, agility, depth and synchronization. Enemy vulnerabilities are discussed in the section on concentration on page 23.

[6] FM 100-15, Corps Operations, (Washington, D.C.: Department of the Army, 1989), 4-0 to 4-1.

[7] FM 100-15, 3-16

[8] The insights offered only point out the role of the enemy commander's vulnerability to deception and the need, during the planning process, to affect the enemy commander's decision making and communicating abilities. See FM 100-15, 4-15 to 4-18.

[9] FM 100-15, 5-0.

[10] FM 71-100, Division Operations, (Washington, D.C.: Department of the Army, 1990), 1-22.

[11] FM 71-100, 1-16 and 1-20. FM 71-100 describes maneuver, fire support, the planning process and deception at the division level consistently with the doctrine in FM 100-15. Page 3-8 only mentions the planning process. This is the only portion of the manual that even discusses the subject.

[12] The division Intelligence and Electronic Warfare (IEW) plan, for example, is required to identify, track, and disrupt the command and control apparatus of enemy first-echelon divisions in the defense and the same against enemy regiments in the offense. Deception is more specific on targeting enemy psychological vulnerabilities than the corps doctrine also. See FM 71-100, 1-20 to 1-21, 3-15, and 4-1.

[13] FM 71-100, Appendix C. Shock effect is used in the mission statement of the heavy division, which are to "close with and destroy the enemy by firepower, mobility, and shock effect." The term is then linked to mobility, armor protection, lethal, long-range direct fires. A search of FM 100-5 (1986), FM 100-5 (1993), FM 71-100, FM 100-15 and FM 101-5-1, Operational Terms and Symbols (1985) revealed no definition of shock or shock action. Shock is a fundamental concept for proponents of targeting enemy psychological vulnerabilities. See Marshall, Men Against Fire, 193 for a discussion of the causes of psychological shock. Vincent K. Brooks, "Back to the Future: Using Attack Helicopters to Restore Shock to the Battlefield," (School of Advanced Military Studies Monograph, US Army Command and General Staff College, First Term, Academic Year 1991-1992), 23 - 24 and 37, has an extensive discussion of shock. In his brief work, Brooks, unable to locate doctrinal definitions of the term, thought shock was primarily dependent on a relative mobility advantage, combined with sufficient firepower to threaten the enemy and sufficient protection to allow the shock force to survive enemy firepower.

Shock is also embraced by advocates of a military technical revolution. See Antulio J. Echevarria and John M. Shaw, "New Military Revolution: Post-Industrial Change," Parameters 22 (Winter 1992-1993), 70-79. A complete discussion of what shock is and how it should be used is beyond the scope of this monograph.

[14]G. Murphy Donovan, "Military Vulnerabilities: Why we Ignore Them." Strategic Review 16 (Summer 1988), 34-42. See also the articles by Gary W. Anderson in the Marine Corps Gazette on Enemy Oriented Operations in the April, June and August 1989 issues.

[15]Donovan, 34-35.

[16]FM 34-1, Intelligence and Electronic Warfare Operations, (Washington, D.C.: Department of the Army, July 1987), 1-1.

[17]FM 34-1, 1-1.

[18]In the first function, the area in which operations are to be conducted is identified, as well as likely enemy forces. Terrain and Weather Analysis assess the impact of terrain and weather on friendly and enemy forces. The integration function brings all information and intelligence together into a cogent product for the use of the commander and staff. FM 34-1, 3-4 and 3-10.

[19]FM 34-1, 3-39 to 3-40.

[20]FM 34-1, 3-41.

[21]FM 34-1, 3-52.

[22]FM 34-1, 3-52.

[23]In a discussion on the effects desired from electronic warfare, see FM 34-1, 5-7.

[24]FM 34-1, 5-9.

[25]FM 34-3, Intelligence Analysis, (Washington, D.C.: Department of the Army, March 1990), 3-28.

[26]Ibid. See 3-5 for a list of elements of combat effectiveness, 3-28 for the need for "tangible" information. A checklist of "red questions on 5-9 lists no psychological vulnerabilities. Chapter 6, Situation Development, gives no emphasis to any enemy vulnerabilities, physical or psychological. On 6-12 the manual clearly states "there is no scientific method of determining" enemy combat effectiveness. It must be determined by "the analyst's subjective judgment." Appendix D, Enemy Strength Computations, is merely a discussion of what units to count, and how they should be depicted.

[27]FM 34-130, Intelligence Preparation of the Battlefield, (Washington, D.C.: Department of the Army, May 1989), 4-42, 4-48, and 5-6.

[28]FM 34-10, Division Intelligence and Electronic Warfare Operations, (Washington, D.C.: Department of the Army, November 1986), 1-5.

[29]However, fire support doctrine does call for technical analysis of enemy vulnerability to specific kinds of fire support attacks. See FM 6-20, Fire Support in the AirLand Battle, (Washington, D.C.: Department of the Army, 17 May 1988), 1-6 and 1-7. FM 6-20-30, Tactics, Techniques and Procedures for Fire Support For Corps and Division Operations, (Washington, D.C.: Department of the Army, 18 October 1989), 2-6 discusses the role of the G-2 in the planning process.

[30]FM 90-2, Battlefield Deception, (Washington, D.C.: Department of the Army, October 1988), 1-2.

[31]FM 90-2. Chapter 1 describes the fundamentals of battlefield deception and discusses the relationship of deception to AirLand Battle Doctrine, but fails to assess any effects other than those on the enemy commander's decision making ability. Chapter 3 discusses deception at the tactical level of war but also fails to analyze any effects other than on the enemy commander's decision making.

[32]See FM 33-1, Psychological Operations, (Washington, D.C.: Department of the Army, 31 July 1987).

[33]James J. Schneider, "The Theory of the Empty Battlefield," Royal United Service Institute Journal (September 1987) 37-44.

[34]John Keegan, The Face of Battle, (New York: Penguin, 1976), 312.

[35]Ibid., 343.

[36]Keegan analyzes five factors of Human psychological and physical endurance which have distinctively changed in the last hundred years, and especially since World War II: the increased duration of battle; the increased lethality in short periods of time; the sheer inability of the modern soldier to effectively flee from the fire of modern weapons; the incongruence of modern civilian life and modern combat; and the increased sense of "littleness, almost of nothingness" modern battle gives to soldiers. See Face of Battle, 308-341. Increased duration is addressed on 307-310, lethality on 310-313, inability to effectively flee on 313-317, the incongruence with civil life on 320-331, and the "littleness" on 331.

[37]Three recent Advanced Military Studies Program monographs analyze the changes on the modern battlefield. John E. Schlott, "Culmination in the Moral Domain: Combat Stress," (School of

Advanced Military Studies Monograph, US Army Command and General Staff College, First Term, Academic Year 1991-1992) analyzes combat stress management in U.S. Army tactical units. Two monographs assess the ability to strike enemy psychological vulnerability. Michael P. Marletto, "Stress Inducement: The Silent Combat Multiplier," (School of Advanced Military Studies Monograph, US Army Command and General Staff College, First Term, Academic Year 1991-1992) assesses the effects of rapid maneuver and continuous operations on the enemy force's psychological cohesion. Thomas A. Kolditz, "Modern Tactics in the Moral Domain: Smart Weapons and the Production of the Combat Stress Reaction," (School of Advanced Military Studies Monograph, US Army Command and General Staff College, First Term, Academic Year 1992-1993) recommends the use of smart weapons for their affect on enemy psychological cohesion. Both of these monographs include valuable reviews of the historical literature. See also Dale B. Flora, "Battlefield Stress: Causes, Cures, and Countermeasures," (Master of Military Arts and Sciences Thesis, US Army Command and General Staff College, Academic Year 1985) focuses on measures that unit commanders can take to minimize psychiatric casualties to friendly forces.

[38]A critical point of discussion for modern combat is the effect of armored combat vehicles on unit effectiveness. Crews of armored vehicles are automatically exposed to other soldiers, increasing their combat effectiveness by decreasing their sense of loneliness. See Keegan, 339 and also Peter J. Schifferle, "The Technology of Teamwork," Armor, (November - December 1985): 10 - 13 for a preliminary study of tank crew effectiveness at the National Training Center.

[39]For the empty battlefield, see Frank M. Richardson, Fighting Spirit: A Study of Psychological Factors in War, (New York: Crane, Russak & Company, 1978), 52; Bellamy, Future of Land Warfare, 274; Schneider, "Empty Battlefield," 37. For the nightmare of noise and fire, see E. B. Sledge, With the Old Breed at Peleliu and Okinawa, (Novato, CA: Presidio Press, 1981), 59 and 63; Harold G. Moore and Joseph L. Galloway, We Were Soldiers Once . . . and Young, (New York: Random House, 1992), 70-72; Molly Moore, A Woman at War: Storming Kuwait with the US Marines, (New York: Scribners, 1993), 247. For the change in night warfare, see Richardson, 50-52 and FM 100-5, Operations (1941), 157 and 181. The non-linear battle is forecast at Anzio in Carlo D'Este, Fatal Decision: Anzio and the Battle for Rome, (New York: Harper Collins, 1992), 3. The need for self-discipline is identified by Richardson, 53; Keegan, 331; Marshall, Men Against Fire, 22; and Kellett, 9. The impact of psychiatric casualties is seen in Richardson, 49 and Keegan, 341. For example, American casualties on Okinawa were approximately 40,000 killed and wounded and 26,000 "evacuated after psychological breakdowns" from Sledge, xviii and 264 and, at Anzio, 4,400 killed, 18,000 wounded, 7,000 missing and 37,000 non-battle casualties in the Allied forces. Non-battle casualties included "exhaustion, shell-shock and madness" from D'Este, 2.

[40]Charles Jean Jacque Joseph Ardant du Picq, Battle Studies: Ancient and Modern Battle, trans. by John N. Greely and Robert C. Cotton, (Harrisburg, PA: The Military Service Publishing Company, 1946).

[41]Ivan Bloch, The Future of War In Its Technical, Economic and Political Relations, (Boston, MA: The World Peace Foundation, 1914, reprint ed. by Fort Leavenworth, KS: Combat Studies Institute, Command and General Staff College, 1991).

[42]Quote is from John Terraine, White Heat: The New Warfare 1914-18, (London: Sidgwick and Jackson, 1982), 208, quoted in Chris Bellamy, The Future of Land Warfare, (New York: St. Martin's Press, 1987), 275. See also Paul Fussell, The Great War and Modern Memory, (New York: Oxford University Press, 1975) and Tim Travers, The Killing Ground: The British Army, The Western Front, and the Emergence of Modern Warfare, 1900-1918, (London: Unwin Hyman, 1990).

[43]See especially Moran, The Anatomy of Courage. The impact of high level command is not accepted by many other writers. See discussion below on results of Shalit's research o the 1973 Arab-Israeli War.

[44]F. O. Miksche, Attack: A Study of Blitzkrieg Tactics, (New York: Random House, 1942), 108-109 gives a clear and contemporary analysis of *Blitzkrieg* as a psychological tactic.

[45]FM 100-5, Field Service Regulations: Operations, (Washington, D.C.: War Department, 22 May 1941), 5 and 18.

[46]John Dollard and Donald Horton, Fear in Battle, (Washington, D.C.: The Infantry Journal, 1944).

[47]See Marshall, Men Against Fire; John Ellis, The Sharp End of War: The Fighting Man in World War II, (London: David and Charles, 1980) and William S. Mullins and Albert J. Glass, eds., Neuropsychiatry in World War II, Volume II, Overseas Theaters, (Washington, D.C.: Department of the Army, 1973). Marshall's system of analysis has recently been criticized as "an invention" without the support of any statistical evidence. Although he gives Marshall credit for the creation of the post-combat unit interview technique and for pursuing the important themes developed by Ardant du Picq, Professor Roger J. Spiller writes that there is no support for the statistical nature claimed by Marshall for his claimed infantry ratio of fire during World War II. See Roger J. Spiller, "S.L.A. Marshall and the Ratio of Fire," Royal United Service Institute Journal (Winter 1988): 63 - 71, especially 68.

[48]Shalit, 135. Also see Huba Wass de Czege, "Understanding and Developing Combat Power," (Fort Leavenworth, KS: U.S. Army Command

and General Staff College, AMSP Course 2 Book 1 Readings, 1990), 13.

[49]Shalit, 142.

[50]See S.L.A. Marshall, Men Against Fire, 118; Shalit, 15; Sledge, 220; and Kellett, 98.

[51]See Keegan, 335-336; Moran, 23, 30, 63-64; S.L.A. Marshall, Men Against Fire, 46; and Richardson, 76-77.

[52]See Sledge, 41 and 206; Richardson, 47; and S.L.A. Marshall, Men Against Fire, 37.

[53]Conceptual framework is from Jesse Glen Gray, The Warriors: Reflections on Men in Battle, (New York: Harcourt and Brace, 1959; reprint ed., New York: Harper and Row, 1970), 40-51. Also see Kellett, 41, 46 and 101-103.

[54]S.L.A. Marshall, Men Against Fire, 38, 41, 127, and 141; Sledge, xiv and 225. Richardson, 12, has the most eloquent statement, "of one thing I feel certain. In the last ditch, when 'the gatling's jammed and the Colonel's dead,' the soldier will be thinking more of his comrades in his section that of the 'cause,' democracy, Queen and Country."

[55]Shalit, 109 reporting on a study by Blake and Butter, and 144; Kellett, 102-103.

[56]Shalit, 109, 158-160, based on the Arab-Israeli War of 1973, has the best analysis of unit cohesion on the modern battlefield. Moran, in a somewhat dated analysis, discusses the British system in World War I, 33. Kellett discusses the same system through World War II, 50 and 134. Sledge discusses the USMC, 98 and Richardson, analyzes the ability of large units like divisions to be cohesive units, 171-174, both analyses based on World War II experiences.

[57]Moran, 129, on the Somme; FM 100-5, Operations (1941) on green units; the Unit Moral Envelope idea is from Kevin B. Smith, "Moral Disruption by Maneuver," U.S. Army Aviation Digest (March - April 1990), 2-10.

[58]Keegan, 336-339, on World War II collapse of general officers; Wass de Czege, 37, on targeting leadership.

[59]The Anzio campaign was aimed at the psychological vulnerability of the German high command, see D'Este, 270. Kellett, 217-222 analyzes the effect of surprise on commanders. The effect of modern command, control and communications systems during the 1973 war is discussed in Shalit, 141. The Japanese decision to attack is assessed in Thomas M. Huber, Japan's Battle of Okinawa: April - June 1945, Leavenworth Papers Number 18, (Washington, DC: Government Printing Office, 1990), 83.

[60]Gray, 40, provides an example of targeting even the primary group through threatening the sheer existence of the group in an environment where escape is possible, but survival is not. Shalit, 142, discusses the threat of multiple combinations on the individual, particularly an unseen threat coupled with perceptions of survival through flight. The fear of isolation is analyzed in S.L.A. Marshall, Men Against Fire, 132 and briefly mentioned in Moore and Galloway, 268. Surprise as an effective weapon against individuals is seen in FM 100-5, (1941), 20, and Molly Moore, 250. Inferiority and fear of failure is discussed in Moran, 98 and S.L.A. Marshall, Men Against Fire, 170. The inability to respond with effect against enemy attack is assessed in Moran, 101 and Molly Moore, 205 and 215. The effect of continuous stress on the individual is one of Moran's primary points, 74 and 102, and is also addressed in Sledge, 157. The effect of a hopeless situation, but with an avenue of escape open, is seen in Molly Moore, 253 and the effect of being totally surrounded, with no hope of anything but death, is seen in Kellett, 37 and S.L.A. Marshall, Men Against Fire, 150.

[61]The green unit example is drawn from S.L.A. Marshall, Men Against Fire, 124. Molly Moore, 240, depicts the disintegration of an Iraqi tank brigade into smaller units, some that surrendered and some that fought to their death during the Persian Gulf War.

[62]This discussion of Operations Desert Shield and Desert Storm is drawn from available unclassified sources. Although insufficient time has elapsed for a reasoned historical analysis of the conflict, the literature is already voluminous. Of particular relevance to this monograph is the research material from the VII Corps and the 24th Infantry Division (Mechanized) available in the Combined Arms Research Library at Fort Leavenworth. Unfortunately, the majority of intelligence documentation in the VII Corps archives remains classified, and therefore was not suitable for this monograph. (The unclassified portions, however, did not conflict with my conclusions.) Government sources include the hearings before Congress on the Conduct of the Persian Gulf War. Published sources include numerous personal experience articles in periodicals and several book-length memoirs, all subject to the normal biases of personal memoirs written shortly after an event. Secondary sources include general lessons-learned discussions such as James A. Blackwell, Jr., Michael J. Mazarr and Don M. Snider, Desert Storm: The Gulf War and What We Learned (Boulder, CO: Westview Press, 1993) which are infrequently focused on intelligence gathering and utilization at the tactical level. New works, published during preparation of this monograph, included Rick Atkinson's Crusade: The Untold Story of the Persian Gulf War (New York: Houghton Mifflin, 1993) and the US Army official history, Certain Victory: The US Army in the Gulf War (Washington, DC: Government Printing Office, 1993).

[63]Atkinson, 343 quoting Leide after the Gulf War was over. Also see Schwarzkopf's testimony in US Congress, Hearings Before the Committee on Armed Services, United States Senate. On Operations

Desert Shield/Desert Storm, April 24, May 8, 9, 16, 21; June 4, 12, 20 1991, (Washington, DC: Government Printing Office, 1991): 320. Hereafter cited as Senate Hearings.

[64]See Molly Moore, A Woman at War: Storming Kuwait with the US Marines (New York: Scribners, 1993): 180 and 318 for a fascinating picture of LTG Walter E. Boomer, Commander of US Marines in the Gulf War, and his analysis of intelligence and the "worst-case scenario" intelligence system. Also Bruce Palmer, Jr., "But It Does Take a Hero: The Schwarzkopf Autobiography," Parameters 23 (Spring 1993): 25 for a critical appraisal of the CENTCOM staff and commander analysis of Iraqi war-fighting ability. Harry G. Summers, On Strategy II: A Critical Analysis of the Gulf War (New York: Dell, 1992): 219-220 discusses the American failure to consider the moral element of enemy force capabilities. Philip Towle, Pundits and Patriots: Lessons Learned from the Gulf War (London: Alliance Publishers, Ltd., 1991): 20 cites a US Army War College study that assessed the Iraqi Army as having "high institutional self-esteem, morale is good. . . officers well trained and confident" and a US Army (?) Deputy Chief of Staff for Intelligence handbook which described the Iraqi army as "one of the best equipped and most combat experienced in the world. . . distinguished by its flexibility." On 26, Towle also cites senior Egyptian military leaders in December 1990 and January 1991 for very different estimates of Iraqi capability, saying that the victory would be a "sweeping up." See also Atkinson, 342 and Francis Toase, "The Land War," in John Pimlott, et al., The Gulf War Assessed, (London: Arms and Armour Press, 1992): 148 for support of Towle's position and 168 for discussion of effect of Vietnam on intelligence estimates.

[65]James F. Dunnigan and Austin Bay, From Shield to Storm: High-Tech Weapons, Military Strategy, and Coalition Warfare in the Persian Gulf, (New York: William Morrow, 1992): 346 for lessons of the Iran-Iraq War and 235 for the desert warfare experience question. Also see US Congress, Intelligence Successes and Failures in Operations Desert Shield/Storm, Report of the Oversight and Investigations Subcommittee of the Committee on Armed Services, House of Representatives, August 16, 1993. One Hundred Third Congress, First Session (Washington, DC: Government Printing Office): 6.

[66]Khafji should have indicated a gross incompetence at Iraqi higher command levels, incompetence at brigade leadership, and a lack of willingness to fight effectively among the Iraqi soldiers, according to Atkinson, 212, Sean McKnight, "The Failure of Iraqi Forces," in Pimlott, 189- 190, and Friedman, 197 - 202. However, although Schwarzkopf later described this as the time "he really began to think we are going to kick this guy's tail," quoted in Watson, 94, Certain Victory describes the outcome of Khafji as proving the "will to fight remained substantial" in the Iraqi mechanized forces. Information on the fight drawn from James A. Blackwell, Jr., Thunder in the Desert: The Strategy and Tactics of the Persian Gulf War, (New York: Bantam Books, 1991): 163 - 166.

[67]Molly Moore, 223 on the Marine captures, Dunnigan and Bay, 266 - 267 for the EPWs taken by the 1st Cav Division. The 101st helicopter captures described in Dunnigan and Bay, 269 and Toase in Pimlott, 158.

[68]The relative combat effectiveness of the various Iraqi forces is discusssed in detail below.

[69]Atkinson, 340 - 342 gives the most balanced account. At a meeting on 21 February in the White House to discuss the BDA controversy, the CENTCOM representative stated, "Can I tell you the moral of this or that division? No. Can I tell you they're on their fannies? Yes." Atkinson, 346. See also Certain Victory, 207 - 210 for the detailed BDA done by ARCENT on the eve of the ground offensive. In a controversial work, James G. Burton, The Pentagon Wars: Reformers Challenge the Old Guard, (Annapolis, MD: Naval Institute Press, 1993): 248, supports Schwarzkopf's assessment of the Iraqis as beginning to crumble. Also see Schwarzkopf's testimony in Senate Hearings, 342. Quote is from Atkinson, 340.

[70]There appears to be a discrepancy in the record over the number of prisoners taken before the start of the ground offensive, and the quality of intelligence gained from their interrogation. Patricia S. Hollis, "1st Cav in Desert Storm -- Deception, Firepower and Movement: Interview with BG Tommy R. Franks," Field Artillery Journal (June 1991): 32, BG Franks stated that 2,000 enemy prisoners of war (EPW) were captured by the 1st Cavalry Division in the two weeks before the ground war started and that their interrogation confirmed the division's intelligence templating. Molly Moore, 184, reports large numbers of defectors being captured by the Marines "for weeks" before the ground attack. BG John F. Stewart, Jr., "Desert Storm: A 3d US Army Perspective," Military Intelligence 17 no 4 (October - December 1991): 23, states "Until just before G Day we had very limited HUMINT. Thus we relied on imagery." Towle, 35, raises an issue that plagued the planners at all levels -- were the defectors indicative of Iraqi morale in all units, their own units, or just themselves? Of course, the Iraqi attack on Khafji, which by dawn of February 1, 1991, had abysmally failed with the loss of dozens of Iraqi tanks and hundreds of prisoners, is cited by at least one observer as a "preview of what was to come" in James A. Blackwell, Michael J. Mazarr and Don M. Snider, Desert Storm: The Gulf War and What We Learned, (Boulder, CO: Westview Press, 1993): 126 - 127. Also see Bruce W. Watson, Military Lessons of the Gulf War, (London: Greenhill Books, 1991): 92 - 94.

[71]The controversy over the count of tanks between ARCENT, CENTCOM and various intelligence agencies in Washington revealed that even this IMINT analysis was controversial and open to different interpretations. See US Congress, Intelligence Successes and Failures in Operations Desert Shield/Storm: 4 and 18 for an assessment. The clearest failure was the inability of echelon

above corps (EAC) staffs to even start Operation Desert Shield with effective intelligence apparatus. CENTCOM J2, for example, deployed with so few personnel that there was "no meaningful intelligence archetecture, or structure, to guide the build-up of theater intelligence resources." CENTAF G2 suffered from similar problems. (Quote from 5.) Stewart, "3d US Army Perspective," 26 discusses the BDA process, including its basis in IMINT. On pages 24 - 25, BG Stewart discusses his two missions -- provide accurate BDA and develop targeting for ARCENT commanders. Also see Atkinson, 232 - 236 for a full discussion of BDA at ARCENT and CENTCOM.

[72]Stewart, "3d US Army Perspective," 29 - 30. BG Stewart, The ARCENT G2, devoted his efforts to meeting the requirements of the tactical commanders by using an intelligence synchronization matrix, which only responded to specific Priority Intelligence Requirements (PIR) from the Corps commanders. Stewart, 24 and 30. The reliance on a matrix, based on commanders' PIR does concentrate limited intelligence assets, but it may also serve to limit intelligence analysis to only a specified set of factors. If it is based on IMINT, the psychological factor will quickly drop off the priority list. See also Watson, Military Lessons of the Gulf War: 155. HUMINT presented a huge problem for all echelons -- the lack of Arabic speaking American soldiers. This severely hampered EPW interrogation efforts throughout the war, of some 80,000 EPWs only 48,000 EPWs were screened, and of these only 526 were interrogated during the entire war, see US Department of Defense, Conduct of the Persian Gulf War: Final Report to Congress, (Washington, DC: Government Printing Office): 586. Hereafter cited as Conduct Report. For an interesting discussion of interrogation operations, Cheryl Stewart, "Joint Interrogation Facility Operations," Military Intelligence 17 no. 4 (October - December 1991): 36 - 38.

[73]See Norman Friedman, Desert Victory: The War for Kuwait, (Annapolis, MD: Naval Institute Press, 1991): 241 for discussion of TENCAP.

[74]For the effect of the deception plan on corps and division intelligence collection, see Conduct Report: 240 and Stewart, "3d US Army Perspective," 24. BG Stewart also addresses the problems of lower echelon lack of intelligence information and analysis during the war on 30.

[75]See Robert H. Scales, et al., Certain Victory: The United States Army in the Gulf War, (Washington, DC: Government Printing Office, 1993): 196 for the PSYOP plan fiasco. (Hereafter cited as Certain Victory.) See Jack N. Summe, "PSYOP Support to Operation Desert Storm," Special Warfare 5 no. 2 (October 1992): 6-9 has extensive coverage of operations at EAC. Robert B. Adolph, Jr., "PSYOP: Gulf War Force Multiplier," Army 42 no. 12 (December 1992): 16-22 discusses some of the problems faced by PSYOP at EAC, including a lack of coordination between the PSYOP community and the Special Operations Command, the higher headquarters of PSYOP. The

greatest success story of PSYOP were leaflet drops directed against the Iraqi soldiers, including the famous "B-52s will be here tomorrow" leaflets. The first strategic leaflets, however, were not dropped over Baghdad until 26 February 1991. See Atkinson, 294 and Dunnigan and Bay, 288.

[76]The success story of deception includes the capture of an Iraqi division commander whose map showed the Wadi al Batin as the Coalition avenue of approach, three days after the ground offensive began. Reported by I.G.C. Durie, "Integration of Firepower: Based on a Presentation to the Institute, 1 April 1992," Royal United Service Institute Journal 137 no. 3 (June 1992): 43. See also Summers, 216, and Summe, 8. Problems did occur below corps, however. See Gary P. Melton, "XVIII Airborne Corps Desert Deception," Military Intelligence 17 no. 4 (October - December 1991): 44. Melton even recommends disbanding division level deception cells, using the personnel and equipment at corps to better support operational deception. He believes that division deception can be done with one officer at each division as a planner, using the normal assets of the division to resource the division commander's deception operations.

[77]Molly Moore is an excellent source for the problems at the Marine headquarters in the field concerning intelligence. See 166 and 179. On 175 she gives LTG Boomer's comment that intelligence support by "high tech" systems "has been abysmal."

[78]Adolph, 20 - 22 is the best source. His discussion of the PSYOP staff in the units of XVIII Airborne Corps identified their assignment to G5 staff instead of G3 staff as the primary problem. But these planners also arrived at their units only after deployment into theater, since nearly all were augmentees from Reserve components. Friedman, 221 discusses the deception effort. Also see Certain Victory: 163 - 164. Also see Certain Victory, 179 and 198. Quote is from 164.

[79]The initial VII Corps plan, briefed to ARCENT on 7 December 1990, called for a breach by the 1st Infantry Division (Mechanized) through the Iraqi barrier complex, followed by the entire corps passing trough the breach. This plan was based on "strong Iraqi first echelon defense" even though the plan called for the attack to begin only after ARCENT was satisfied with the BDA of the Iraqi Army. This plan was modified and published on 13 January 1991. But the modification was to still do the breach with the full 1st Infantry but pass only the 1st UK Armored Division through, the remainder of the corps would simply go around the Iraqi to the left. See Peter S. Kindsvatter, "VII Corps in the Gulf War: Part 1 : Deployment and Preparation for Desert Storm," Military Review 72 no. 1 (January 1992): 12 and 13. This plan was adopted even though the corps planned on achieving operational surprise. The VII Corps archive collection also includes indicators of the general failure to assess enemy psychological vulnerability. The After Action Review on Intelligence by the Corps staff includes comments about

improvements to imagery at division and desires for a more responsive intelligence system to support offensive actions, but no comments at all about the analysis of enemy psychological vulnerability. This may be due, at least in part, to the Corps reliance on EAC for most analysis and all HUMINT. See VII Corps Archives, Part 1 (Executive Summary and Historical Narrative) Volume 1, Executive Summary and Historical Narrative: Enclosure 3, Major Lessons Learned, SG: Historian, SSG: AAR-010, slide 3C. Also Certain Victory, 163-164 for problems at VII Corps intelligence, particularly its configuration for NATO operations.

[80]Blackwell and Mazarr, 140 - 141; Certain Victory, 200 - 203;

[81]The RGFC is a controversial subject. Some authors treat them as an elite fighting unit on the par with the best of the German World War II forces, others as just another "Third World Palace Guard political repression force." See Certain Victory, 113 and 118 and Toase in Pimlott, 163. Peter S. Kindsvatter, "VII Corps in the Gulf War: Part 2: Ground Offensive," Military Review 72 no. 2 (February, 1992): 18 gives a balanced assessment of the quality of the RGFC. Also see Friedman, 235. The effect of the air offensive on the various Iraqi units was controversial, then and now. Blackwell and Mazarr give a superb depiction of life for the conscript Iraqi infantryman under air attack. By contrast, Jeffrey Record, Hollow Victory: A Contrary View of the Gulf War, (Washington, DC: Brassey's, 1993): 107, believes the RGFC survived the air attack "intact enough to fight another day."

[82]See Adolph, 20 and 22 for discussion of problems faced by PSYOP planners in the XVIII Airborne Corps. But the strangest comment is found in the official US Department of Defense report on the war, where the RGFC is described as still combat effective at the start of the ground offensive "as a result of a conscious decision to target the forward defensive positions as part of the deception plan." US Department of Defense, Conduct of the Persian Gulf War: Final Report to Congress, (Washington, DC: Government Printing Office, 1992): 253 - 254.

[83]Summe, 7, identifies sixty-six loudspeaker teams provided by US Army PSYOP units to ground elements of the Coalition. William H. McMichael, "Mind Games: Psychological Operations in Operation Desert Storm," Soldiers 47 no. 5 (May 1992): 8 states that all ground elements of the coalition forces were accompanied by loudspeaker teams down to brigade level. They also were used with helicopters to bring the surrender message to isolated Iraqi units.

[84]From US Army, Headquarters, 24th Infantry Division (Mechanized), Historical Reference Book, (Fort Stewart, GA: 24th Infantry Division (Mechanized), April 1991): Item 16, "Southern Storm Study."

[85]A very important source is the declassified OPLAN for the attack by the 24th Infantry Division into Iraq. This is currently the

only unclassified intelligence estimate issued to the subordinate brigades of a heavy division in January 1991. US Army, Headquarters, 24th Infantry Division (Mechanized), Operation Desert Storm: Attack Plan OPLAN 91-3, (Fort Stewart, GA: 24th Infantry Division (Mechanized), April 1991): Annex B, B-1-2 and B-1-C-7.

[86]24th Mech, Historical Reference Book: Item 53, "General Order to Attack."

[87]Headquarters, 24th Infantry Division (Mechanized), A History of the 24th Mechanized Infantry Division Combat Team During Operation Desert Storm, (Fort Stewart, GA: 24th Infantry Division (Mechanized), April 1991): 14.

[88]Dunnigan and Bay, 294; U.S. News and World Report, eds., Triumph Without Victory: The Unreported Story of the Persian Gulf War, (New York: Random House, 1992): 349 - 351. MG McCaffrey's testimony at the Senate Hearings into the war are particularly informative: Senate Hearings, 117 - 118 on night fighting, 147 on effect of deception operations, 120 - 121 on psychological defeat of the Iraqis. The 24th Division lost one M1A1 and destroyed and 1 M2 Bradley Infantry Fighting Vehicle damaged and destroyed over seven hundred Iraqi vehicles, 120.

[89]The information available on VII Corps units is almost entirely published articles. The VII Corps archives, although extensive, are primarily still classified. Only the 24th Infantry Division has declassified most of its documentation.

[90]For the controversy between GEN Schwarzkopf and then LTG Franks, see Atkinson, 404 - 407, 421 - 425; Burton, Pentagon Wars, 247 - 250, Certain Victory, 222 and 252 - 253; Kindsvatter, "Ground Offensive," 22; and Bruce W. Watson, 102. Also see Burton's article, "Pushing Them Out the Back Door," US Naval Institute Proceedings (June 1993): 37 - 42.

[91]One incident occurred in the 3d Armored Division when the passage of the fresh brigade required a pause of at least two hours. The second incident occurred in the 1st Armored Division on the evening of 27 February, where the elapsed time for the passage was in excess of six hours. See Certain Victory, 281 and 300.

[92]Certain Victory, 301 - 303.

[93]Kindsvatter, "Ground Offensive," 24 and Certain Victory, 225 - 226 and 232. Blackwell, 191 writes that the division had taken 5500 EPW before halting for the night -- certainly an indicator that pursuit should be considered.

[94]Kindsvatter, "Ground Offensive," 25 - 26 and 29; Certain Victory, 241 discusses the successful Apache strike.

[95]Blackwell and Mazarr, 142. For the effect of the tempo of the operation, as conservative as it was, from the Iraqi viewpoint, see Certain Victory, 291.

[96]Firepower was carefully considered throughout VII Corps. See Certain Victory, 232 for psychological effects of artillery on the Iraqis and Morris J. Boyd and Randall A. Mitchell, "Focusing Combat Power -- the Role of the FA Brigade in Desert Storm," Field Artillery Journal (February 1992): 46. This was clearly the intent of American commanders. See VII Corps Desert Storm Archives, Part 4 (Major Subordinate Command Historical Reports) Volume 12A: 1st Armored Division in Operation Desert Shield/Desert Storm. Executive Summary. SG: Historian, SSG: AAR-215, slide AAC-011. Deep strikes broke at least one unit of the RGFC, the Adnan Infantry Division, and the Iraqi 10th regular army armored division. Both units were attacked by Apaches and then fled north into Iraq. Kindsvatter, "Ground Offensive, 31 - 32 and Certain Victory, 291 and 301. Certain Victory, 270 - 271 has a colorful depiction of Iraqi RGFC psychological paralysis while under a night deep strike. The direct firefight was overwhelmingly in favor of Coalition psychological cohesion. For example, the 1st Armored Division destroyed 300 Iraqi armored vehicles of the RGFC and lost one American killed in action. In an attack on the RGFC Tawalkana Division, in defensive positions, in the daylight, at ranges from 3,000 meters to point blank, a single 1st Armored Division armored task force (TF 1-37), destroyed 76 T-72 tanks and 84 BMPs while losing 4 tanks, but no killed in action. Certain Victory, 267 - 270.

[97]Atkinson, 467.

[98]Molly Moore, 211 gives Marine LTG Boomer's comments on inadequate intelligence or bringing too many assets to the Persian Gulf. McKnight in Pimlott, 191 and Bruce Palmer, 25 have the same criticism. See the testimony by MG Barry R. McCaffrey, Commander 24th Infantry Division (Mechanized), in Senate Hearings, 112 - 113 for a different perspective on the dangers of underestimation of the opponent.

[99]William S. Lind, Maneuver Warfare Handbook, (Boulder, CO: Westview Press, 1985): 5 - 7 and "The Changing Face of War: Into the Fourth Generation, Military Review (October 1989): 6 - 7. For the effects of overwhelming force, particularly firepower, see Robert H. Scales, Jr., "Firepower: The Psychological Dimension," Army 39 (July 1989): 43 - 50.

[100]John Stewart, 29 and Intelligence Hearings, 24 - 25 discuss the need to increase HUMINT resources in Army intelligence. Record, 61 - 62 questions the American Army threat assessment system, and calls for less "infatuation with what can be counted." Donovan, 40, calls for military assessments that account for enemy vulnerabilities, to preclude wasting limited military resources.

[101]FM 100-5 (1993), 6-7. Although FM 100-5 (1993) is an evolutionary document, there is a clear change in the depiction of will on the battlefield from the earlier version of FM 100-5. The 1986 version, although it occasionally stated the role of leadership and the psychological impact of combat on units and battle, did not have the clear statement on will that the 1993 version has on page 6-7. A comparison of the two manuals in definitions of such terms as maneuver, firepower, initiative, and agility revealed the evolutionary nature of the newer document, but also showed the new, clearly defined use of will in the 1993 version. See FM 100-5 (1986), 2, 5, 12-16, 23-26 and FM 100-5 (1993) Chapter 2. The primary discussions of will in the 1986 version are on 10 and 11 and are primarily concerned with fighting outnumbered and winning using will as a combat multiplier.

[102]FM 100-5 (1993), Chapter 2 has the discussion of "confuse, demoralize, destroy" on 2-3; purpose of the initiative on 2-6; physical nature of objectives addressed on 2-4; surprise described on 2-5. Chapter 6 includes estimates, commander's intent, concept of the operation on 6-6 and decisive points on 6-7 through 6-8.

[103]FM 100-5 (1993), 6-7.

[104]FM 100-5 (1993), 14-2.

[105]US Army, FM 34-130, Intelligence Preparation of the Battlefield. Initial Draft, February 1993, (Fort Huachuca, AX: US Army Intelligence Center, 1993): 2-2 - 2-3, 3-2, 3-48 - 3-49, 3-52 - 3-53. Chapter 4 of this manual gives a detailed example of IPB using a US heavy division attacking an attrited threat division. The example covers pages 4-2 to 4-46, yet never once discusses the threat morale, psychological vulnerability, or even combat effectiveness.

[106]US Army, FM 34-8, Combat Commander's Handbook on Intelligence, (Washington, DC: Department of the Army, 1992): 4-1 for HUMINT, Appendix A for PIR discussion. This manual is "written primarily for maneuver commanders at echelons corps and below." Quote is from ii. Another recent manual is FM 34-52, Intelligence Interrogation, (Washington, DC: Department of the Army, 1992). Appendix B of FM 34-52 gives procedures and examples for "Questioning Guides." Very few are directed towards enemy morale and combat effectiveness information, and when mentioned, they are always towards the middle of lists in priority. See B-1, B-2, and B-5.

[107]Ira C. Owens, "New Joint Intelligence Centers: Revolution in MI," Army (October 1992): 165 - 167 and LTG Charles B. Eichelberger, "The MI Corps: A Vision of the Future," Military Intelligence (October - November 1991): 11.

[108]Ira C. Owens, 166 - 167.

[109]Eichelberger, 8 - 9. The "Graphic Intelligence Report is discussed by John Stewart, 30 and Owens, 167 and an example given in FM 34-8, 2-19.

[110]US Army, FM 33-1, Psychological Operations, (Washington, DC: Department of the Army, 1993): 6-1 and C-1. Jack N. Summe, "Total PSYOP integration: Reorganizing Active and Reserve-Component PSYOP Forces," Special Warfare 5 no. 2 (October 1992): 10 -12. The new manual concentrates on PSYOP in other than war, for example, under 5 pages are devoted to "conventional operations," nine to "Special Operations Forces operations," and eight to "low intensity conflict," see Chapter 3.

[111]Michael W. Cannon, "The Division Deep-Battle Targeting Cell: Thor's Hammer or Rube Goldberg Device?" Field Artillery (April 1991): 44 - 49 and Forest D. Haynes, III, "Synchronizing the Divisional Deep Fight," Field Artillery (April 1993): 21 - 25 are typical of targeting discussions. See also John Stewart, 29. Concerns over simulations are not new, but have gained critical attention due to the outcome of the Persian Gulf War. Kevin B. Smith, "Moral Disruption by Maneuver," US Army Aviation Digest (March - April 1990): 2 - 10 and Huba Wass de Czege, in Daniel Serafty, et al., "Draft Working Paper TR-581, Developing Command Decision Making Expertise: Workshop Report, June 1993," Burlington, MA: Alphatech, Inc., 1993): 27 - 28, comment on the lack of the moral domain in simulations. Also Roger J. Spiller, "Tenth Imperative: The Effects of Battle Upon Soldiers Sets the Limits on Operations," Military Review 69 (April 1989): 13 and Scales, "Firepower," 43. A search of Center for Army Lessons Learned documentation revealed no substantive discussion of enemy psychological vulnerability. A request of the Army Research Institute, Fort Leavenworth Field Office, to conduct a search of documentation on the subject revealed no work in the last decade.

[112]Gordon R. Sullivan and James M. Dubik, "Land Warfare in the 21st Century," Military Review (September 1993): 13 - 32 and Frank Kendall, "Exploiting the Military Technical Revolution: A Concept for Joint Warfare," Strategic Review (Spring 1992): 23 - 30.

[113]Wass de Czege in Serafty, 37; Smith, 3; Dunnigan and Bay, 143 - 144, and Scales, "Firepower," 50. The Vulnerability Recognition Cell is one of a series of fascinating proposals by Gary W. Anderson in articles in the Marine Corps Gazette: "When Maneuver Fails," (April 1989): 57 - 59; "Enemy Oriented Operations: What Makes Them Hard?" (June 1989): 22 - 24; "Implementing Enemy-oriented Operations," (August 1989): 35 - 37. Scales, "Firepower," 49 also addresses specific changes to doctrine to maximize the psychological shock of firepower.

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